A70 Series
High Temperature Cutout Thermostat with Manual Reset

Application

The A70 high temperature cutout thermostats have electrical contacts operated by a temperature sensing element. The switching mechanism on the single-pole, single-throw models opens the circuit on a rise in temperature. On the 4-wire, two-circuit models, the main load contacts (LINE-M2) open on a temperature rise and simultaneously the auxiliary or alarm contacts (LINE-M1) close. The thermostat is normally used to sense the air temperature in a return air duct and is wired to shut down the air conditioner or ventilating fans when the air temperature becomes excessively high. It can also be applied as a high temperature cutout thermostat on warm air systems to shut down the burner if abnormally high temperature is caused by failure of the circulating fan, or blocking of the return air or supply air duct systems.

The thermostats with manual reset will lock out when the sensed temperature exceeds the set point. The reset must be pushed and released before the contacts can be reclosed.

All Series A70 thermostats are designed for use **only** as operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) that protect against, or systems (alarm, supervisory systems) that warn of, control failure.

Installation

Mounting

The thermostat may be mounted to a wall surface or panel board using the two mounting holes provided in the back of the case. The desired mounting position is with the element bellows pointing down. Install the sensing bulb in the return duct of air conditioning, ventilating or heating system.

Wiring

> ⚠ WARNING: Disconnect the power supply before wiring connections are made to avoid possible electrical shock or damage to the equipment.

Make all wiring connections using copper conductors only, and in accordance with the National Electrical Code and local regulations. For maximum electrical rating of the thermostat, see the label on the inside of the thermostat cover. Loads exceeding the rating of the thermostat can be handled with a relay or motor starter.

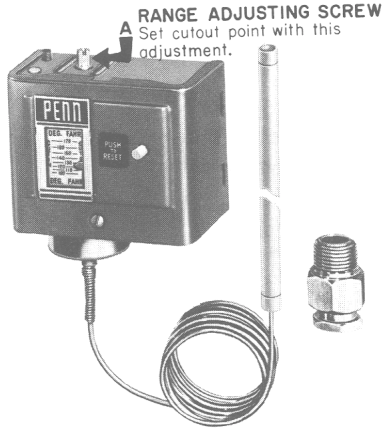

Fig. 1 -- Thermostat with cover in place showing range adjusting screw and 1/2 in. NPT adapter nut.

⚠ CAUTION: Use terminal screws furnished in the switch (8-32 × 1/4 in.). Longer terminal screws can interfere with the switch mechanism and damage the switch.

General Instructions

1. Avoid sharp bends or kinks in the capillary tubing.
2. Locate the bulb where there is free air circulation making sure the bulb does not contact any surface. The bulb may be securely clamped in place using an adapter nut which will be supplied, when ordered.
3. Coil and secure any excess

Specifications

Type Number	**A70DA**	SPST, Open on Temperature Rise, Manual Reset
	A70KA	4-Wire, 2-Circuit, Main (LINE-M2) Contacts Open on Temperature Rise, Simultaneously Auxiliary Contacts Close, Manual Reset
Range		100 to 170°F (38 to 77°C) With Cutout Point Factory Set at 125°F (52°C)
Differential		Lockout Requiring Manual Reset After Cutout
Maximum Overrun Temperature at the Bulb		250°F (121°C)
Element		Vapor Pressure, 72" Capillary, ⅜" x 10" Bulb
Connector		Adapter Nut Supplied, When Specified

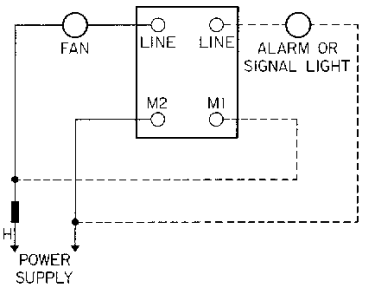

Fig. 2 — Typical wiring diagram for 4-wire, 2-circuit thermostat.

Code No. LIT-121117
Form 997-743-6

capillary length to avoid vibration, but allow some slack in the capillary to avoid "violin string" vibration which can cause the tubing to break. Do not allow tubing to rub against metal surfaces where friction can damage the capillary.

Checkout Procedure

The operating point of the thermostat should be confirmed by an accurate thermometer.

Before leaving the installation, observe at least three complete operating cycles to be sure that all components are functioning correctly.

Repairs and Replacement

Field repairs must not be made. For a replacement thermostat, contact the nearest Johnson Controls distributor.

SPST Electrical Ratings

Motor Ratings	120 V	208/240 V	240 V*
AC Full Load Amp	20.0	17.0	20.0
AC Locked Rotor Amp	120.0	102.0	102.0
Non-Inductive Amp	22.0	22.0	22.0
Pilot Duty — 125 VA, 120 to 600 VAC 57.5 VA, 120 to 300 VDC			

*Ratings apply to hermetic compressors.

4-Wire, 2-Circuit

Pole Number	LINE-M2 (Main)				LINE-M1 (Auxiliary)			
Motor Rating	120 V	208 V	240 V	277 V	120 V	208 V	240 V	277 V
AC Full Load Amp	16.0	9.2	8.0	—	6.0	3.3	3.0	—
AC Locked Rotor Amp	96.0	55.2	48.0	—	36.0	19.8	18.0	—
AC Non-Inductive Amp	16.0	9.2	8.0	7.2	6.0	6.0	6.0	6.0
Pilot Duty — Both Poles	125 VA, 120 to 600 VAC 57.5 VA, 120 to 300 VDC							

JOHNSON CONTROLS

Controls Group
507 E. Michigan Street
P.O. Box 423
Milwaukee, WI 53201

Printed in U.S.A.